VNIVERSITAT DE VALÈNCIA

Course Guide
34308 Ophthalmic lens assembly and adaptation

COURSE DATA

Data Subject	
Code	34308
Name	Ophthalmic lens assembly and adaptation
Cycle	Grade
ECTS Credits	9.0
Academic year	2018 - 2019

Study (s)

Degree	Center	Acad. year	Period
1207 - Degree in Optics and Optometry	Faculty of Physics	3	Annual

Subject-matter

Degree	Subject-matter	Character
1207 - Degree in Optics and Optometry	14 - Ophthalmic optics	Obligatory

Coordination

Name	Department
BENLLOCH FORNES, JOSEFA ISABEL	280 - Optics and Optometry and Vision Sciences
BUENO GIMENO, INMACULADA	280 - Optics and Optometry and Vision Sciences
OLMOS CARRILLO, FRANCISCO JULIAN	280 - Optics and Optometry and Vision Sciences

SUMMARY

The primary objective of this course is to provide basic knowledge of the parameters involved in an appropriate adaptation of an optical prescription.

The second objective is the implementation of this knowledge through practice sessions.

PREVIOUS KNOWLEDGE

Relationship to other subjects of the same degree

There are no specified enrollment restrictions with other subjects of the curriculum.

Other requirements

It is recommended to have taken the course "Ophthalmic optics" in the 2nd year of degree.

OUTCOMES

1207 - Degree in Optics and Optometry

- To know the principles, description and characteristics of the fundamental optical instruments, as well as the instruments used in optometric and ophthalmological practice.
- To know and to calculate the most relevant geometric, optical and physical parameters that characterize all types of ophthalmic lenses used in optometric prescriptions and to know how to relate them to the properties involved in the adaptation process.
- To know the physical and chemical properties of the materials used in optics and optometry.
- To know the processes of selection, manufacture and design of lenses.
- Being able to handle the techniques of centering, adaptation, assembly and manipulation of all types of lenses, an optometric prescription, visual aid and protective glasses.
- To know and to handle the techniques for the analysis, measurement, correction and control of the effects of compensating optical systems on the visual system, in order to optimize their design and adaptation.
- Training for the calculation of the geometric parameters of specific visual compensation systems: low vision, intraocular lenses, contact lenses and ophthalmic lenses.
- To identify and to analyze environmental and occupational risk factors that can cause visual problems.

LEARNING OUTCOMES

English version is not available

DESCRIPTION OF CONTENTS

1. THEORETICAL UNIT

-Theory block. 15h
- Introduction.
- Design and parameters of the frames.
- Types of ophthalmic lenses according to the manufacture parameters and laboratories. Lens catalogues. Choosing the most appropriate lens for each case.
- Proper adjustment of optical requirements on frames.

- Alignment and adjustment of frames.

Seminars. 5h
- Management of software for the request of ophthalmic lenses

2. Fitting ophthalmic lenses (I) 30h.

Fitting ophthalmic lenses (I) 30h.
Practice 1. Recognition of different types of lenses. Marking and focusing lenses.
Practice 2. Adjustement and recording of pupillary measurements
Practice 3. Measuring the dimensions of frame (Boxing format). Minimum diameter of the ophthalmic lens and pre-calibrated.
Practice 4. Fitting spherical organic and mineral lenses on acetate and metal frames. Frame outline manually.
Practice 5- Review of previous practices and complementary activities.

3. Fitting ophthalmic lenses (II) 40h.

Practice 6. Assembly with organic spherical-cylindrical lens templates and mineral on acetate and / or metal mounts.
Practice 7. Assembly without organic and mineral spherical-cylindrical lens templates on acetate and / or metal mounts.
Practice 8. Assembly of a slotted and / or drilled spectacle.
Practice 9. Assembly of a bifocal and / or progressive.
Practice 10. Other types of assemblies.
Practice 11. Review and complementary activities.

WORKLOAD

ACTIVITY	Hours	% To be attended
Laboratory practices	70,00	100
Theory classes	15,00	100
Tutorials	5,00	100
Attendance at events and external activities	5,00	0
Preparing lectures	15,00	0
TOTAL	**110,00**	

TEACHING METHODOLOGY

CLASSROOM THEORY WILL BE SUPPORTED BY BOARD CLASSES, SLIDES AND PROJECTIONS ...
And the LABORATORY CLASSES consistS of a short introduction relización theory and the work itself (WITH PROGRESSIVE DIFFICULTY) LABORATORY AND Specific tooling.

EVALUATION

The total scorewill be the result of:

- Theory exam 2 points.

- Implementation and presentation of tasks 0,5 points.

- Laboratory practices: assistance, performance and adequate delivery of related practices 1,0 point.

-Delivery of three complete glasses: one single vision, the other bifocal and progressive at the end of the course 1,5points.

- Laboratory practices exam 5 points. Superior errors in marking the sphero-cylindrical lenses axis, when one of them is over than 5º, the optic exam fails the test. Superior measurements errors to +/- 0,50 D in the power spherical (as well as cylindrical) indicated in the sphero-cylindrical lenses, the optic exam fails the test.

The theory and the laboratory exam will be carried out at the end of the course in the 2 official announcements. It must exceed 50% of the theory exam to be able to present to the laboratory exam.

Students must pass both the theory and the laboratory exam, at least, the 50% to the average.

The information of the works and activities will be detailed in class or through the virtual classroom.

REFERENCES

Basic

- Salvado, J. [et al.]. Tecnología óptica: lentes oftálmicas, diseño y adaptación. Barcelona: Edicions UPC, 2001 ISBN 8483014742.
- Benito Galindo, A y Villegas Ruiz, EA. Montaje y aplicaciones de lentes oftálmicas. Universidad de Murcia 2001